Claims

1. Apparatus comprising a telecentric optical system for transmitting an image to a digital image plane, said telecentric optical system comprising
   (a) telecentric optics which are telecentric in image space,
   (b) at least one planar surface that produces ghost images, said planar surface located in image space after said telecentric optics,
   (c) said telecentric optical system configured to determine a characteristic function for the ghost images produced by the planar surface, and to provide correction for the ghost images based on the characteristic function.

2. Apparatus comprising a telecentric optical system for transmitting an image to a digital image plane, said telecentric optical system comprising
   (a) telecentric optics which are telecentric in object space,
   (b) at least one planar surface that produces ghost images, said planar surface located in object space before said telecentric optics,
   (c) said telecentric optical system configured to determine a characteristic function for the ghost images produced by the planar surface, and to provide correction for the ghost images based on the characteristic function.

3. Apparatus comprising a telecentric optical system for transmitting an image to a digital image plane, said telecentric optical system comprising
   (a) telecentric optics which have double or duel telecentricity,
   (b) at least one planar surface that produces ghost images, either one of said planar surfaces located in image space after said telecentric optics and or the other planar surface located in object space before said telecentric optics,
   (c) said telecentric optical system configured to determine a characteristic function for the ghost images produced by the planar surface, and to

provide correction for the ghost images based on the characteristic function.

4. A method for providing ghost image correction in a telecentric optical system for transmitting an image to a digital image plane, where the telecentric optical system comprises telecentric optics which are telecentric in image space, and at least one planar surface produces ghost images is located in image space after the telecentric optics, the method comprising the steps of
   (a) determining a characteristic function for the ghost images produced by the planar surface, and
   (b) providing correction for the ghost images, based upon the characteristic function for the ghost images.

5. A method for providing ghost image correction in a telecentric optical system for transmitting an image to a digital image plane, where the telecentric optical system comprises telecentric optics which are telecentric in object space, and at least one planar surface produces ghost images is located in object space before the telecentric optics, the method comprising the steps of
   (a) determining a characteristic function for the ghost images produced by the planar surface, and
   (b) providing correction for the ghost images, based upon the characteristic function for the ghost images.

6. A method for providing ghost image correction in a telecentric optical system for transmitting an image to a digital image plane, where the telecentric optical system comprises telecentric optics which are which have dual telecentricity, and wherein at least one planar surface that produces ghost images is located in image space after the telecentric optics and or another planar surface that produces ghost images is located in object space before the telecentric optics, the method comprising the steps of
   (a) determining a characteristic function for the ghost images produced by the planar surface, and

(b) providing correction for the ghost images, based on the characteristic function for the ghost images.

7. Apparatus as set forth in claim 1, wherein a plurality of planar surfaces are located in image space after the telecentric optics, at least one of which produces ghost images, said telecentric optical system configured to determine a characteristic function for the ghost images produced by the plurality of planar surfaces, and the correction is based on the characteristic function for providing correction for the ghost images.

8. Apparatus as set forth in claim 1, wherein said predetermined characteristic comprises a weighting function that has been predetermined for the telecentric optical system.

9. Apparatus as set forth in claim 1, wherein said telecentric optical system produces image data corresponding to image data from an object, said correction is configured to sample portions of the image data to produce weighted samples corresponding to the predetermined weighting function, sum the weighted samples to create an approximation to a weighted integral, and then repeat the foregoing steps to compute weighted integrals for each of the image elements, and thereby to correct the image data.